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Development of Evaluative Indicator of SAFETY Education for KOREA Army

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Abstract

Purpose; This paper intends to develop evaluation indicators of safety education for the Republic of Kore Army(ROKA) personnel. In Korea, there are a lot of accidents and disasters that Korean people had never been experienced including earthquakes, fire casualties, and marine accidents. There are many physical and psychological risk factors including explosion, injury, fire, traffic accident, and psychological violence, etc. Researchers suggest that ROKA soldiers are vulnerable to daily risk factors but do not receive enough safety education due to the lack of appropriate manual, instructor, and time. This study thoroughly reviewed the literature including the US Army field manual on the safety education and studies of industrial safety. Seventeen areas of safety management in the military bases were described in the field manual and counter-measures of each area were reviewed. Thirty evaluative indicators were presented based on the literature review and the value of each indicator was suggested as a milestone for designing and conducting the safety education. The 30 indicators are composed based on the CIPP(context-input-process-product) model and each of the indicator implies theoretical meanings and practical suggestions. The indicators begin with analyzing the hazard of the workplace and they contain : (1)collecting and analyzing the hazards in the workplace, (2)collecting and analyzing the information about the health management system, (3)making the safety management plan in the workplace, (4)reflecting the opinions of military personnel in making the safety management plan, (5)investigating the implementation of health education and evaluation for military personnel, (6)reflecting the military personnel's need for health and safety education, (7)evaluating the leader's interest in the safety and health promotion, (8)investigating the military personnel's consciousness of safety, (9)employment of officer in charge of safety management, (10)percentage of the officers in charge of the safety management, (11)employment of the officers in charge of safety and health education, (12)qualification of the officers in charge of the safety and health education, (13)presence of department of safety and health management and education, (14)volume of contents of the safety and health education, (15)Percentage of budget for safety and health education, (16)implementation of regulations on safety and health, (17)specification of educational objectives on safety, (18)review of the appropriateness of the safety education objectives, (19)diversity of educational method for the safety education, (20)specification of the safety education contents, (21)implementation of the educational plan, (22)checking the military personnel's awareness of the safety objectives, (23)the military personnel's satisfaction in the safety education, (24)participation of the military personnel in the safety education, (25)availability of resources for the safety education, (26)communication about the contents of the safety education, (27)changes in the consciousness of the safety, (28)changes in the knowledge of the safety, (29)changes in the attitude toward the safety, (30)changes in the real actions in the safety management and implementation.

[Keywords] ***Safety, Republic of Korea Army, Safety Education, Evaluation, Indicator***

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1. Introduction

There are a lot of risk factors in the contemporary society in the area of home, school, community, and workplace. About 86% of Korean adults feel unsafe in their daily life[1].

In the military base, many causes of accident are emerging due to lack of appropriate facility, safety education to the personnel, safety regulation, or reckless behavior. Among the causes, lack of safety awareness is the most crucial factors for the beginning of accidents[2]. The leaders must teach their subordinates to keep the safety awareness by giving them information about functional and operational knowledge in detail in using every day facilities.

ROKA suggests the concrete safety regulations to personnel and requires the commanders and staffs to educate the army personnel regularly with safety rules. Military personnel's physical and psychological performance and welfare are affected by the overall education of safety and health[3].

The problem, however, is that there are not enough evaluative indicators for the effectiveness of the safety education. Therefore, this study intends to specify the evaluation indicators for the ROKA's safety education. For that purpose, the researcher

2. Preceding Research

'Safety' is a condition that a man does not feel of any threat from external or internal environment[4]. Soldiers in safe environment perform better than peers working in poor safety[5]. They are more likely to have prosocial and healthy behaviors(showing socially desirable cognitive skill). Health and safety are foundations of high quality performance and unity in the military organization[6].

In the US Army, about 61% of soldiers feel unsafe in the battle area[7].Thus, the army authority gives detailed rules and regulations for health and safety to protect its members[8]. The US army suggests 5 steps to control and reduce the risk factors: (a)identifying hazards, (b)assessing the hazards, (c)developing controls and making risk-management decision, (d)implementing controls, and (e)supervising and evaluating the effect of control measures. The standard for risk management is leadership at the appropriate level of authority making informed decisions to control hazards or accept the risks[8].

In detail, the US army specifies 17 the risk control areas: (1)Accident reporting,(2) Workplace safety, (3)Transportation safety, (4)Family and off-the-job safety, (5)Range safety, (6)Explosive safety, (7)Aviation safety, (8)Tactical safety, (9)Radiation safety, (10)System safety, (11)Hazardous materials operation, (12)Research, development, test, and evaluation(RDTE) activities. (13)System safety management and engineering, (14) Operations involving the use of ionizing and nonionizing radiation, (15)Public safety, (16)Family, dependent, and off-the-job accident prevention, (17)Other loss control elements.

The US Army regulation says that leaders and managers are responsible for integrating risk management into all Army processes and operations. Safety and occupational health staffs provide risk management training, tools and other related assistance. Leaders and managers must ensure that physical standards for facilities and equipment meet or exceed safety and health standards established in pertinent statutes and regulations and in the Army regulations. The staffs are in charge of risk management process and it is incorporated in regulations, directives, special orders, training plans, and operational plans to minimize accident. The risk regulations are developed for all operations entailing risk of death, serious injury, occupational illness or property loss. The risk assessment matrix can be tailored by the commander for the type of hazard identified. For example, the matrix in the regulation should be used for hazards involving unsafe or unhealthful

working conditions and other hazards associated with base operations. The risk assessment matrix should be used for military training and operational hazards when thee staffs and commanders design the safety education. Effective safety educations will reduce the risk factors by enhancing the military personnel's awareness of the safety in the work and operation. The effective safety education also promotes the commanders' and staffs' consideration of safety in their military decision-making process for military training and operations.

For that purpose, military officers in charge of safety management should develop safety education program and evaluation standards to identify the effectiveness of the education. Kirkpatrick's CIPP(Context-Input-Process-Product) model gives useful direction for that purpose. The education staffs implement actions to meet responsibilities contained in the accident prevention plans of higher headquarters and to provide focus and continuity to safety program efforts.

First, the officer in charge of safety management and education officer design the occupational health and safety training in all Army activities and personnel including civilian employees. Second, they provide all the members in the army with training and education necessary to achieve the skills listed below:

(1)Recognizing the hazards and accident risks associated with their duties and work environment and know the procedures necessary to control these risks and work safely. (2)Knowing their accident prevention related rights and responsibilities as outlined in relevant statutes and regulations. (3)Recognizing the safety responsibilities of their leaders, supervisors, and commanders. (4)Providing unit members with safety education and promotional materials such as posters, films, technical publications, pamphlets, incentive items, and related materials. (5)Ensuring personnel are protected from reprisals for exercising lawful rights. All Army personnel, both military and civilian, will be protected from coercion, discrimination, or reprisals for participation in the Army safety program.

Such procedures will include provision to preserve individual anonymity of those submitting safety and health complaints when requested; to ensure prompt, impartial investigation of allegations of reprisal; and to provide corrective action when such allegations are substantiated.

The above protection against reprisal extends specifically to the right of an Army civilian to decline to perform an assigned task because of a reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious bodily harm and that there is insufficient time to seek effective redress through normal hazard reporting and abatement procedures.

The officers need to establish specific plans to assure continuity of safety and health program services during tactical operations or mobilization. These plans will address mission definition, organizational concepts, and staffing and operational procedures required to assure maximum safety function support to the combat mission. Officers are supposed to make such plans in all organizations and commands for combat or combat support.

The safety officers also need to conduct annual safety and loss control program evaluations to identify the effectiveness of their effort. An effective safety education program is to reduce injuries and illness. The program directors are to ensure that all injuries and illnesses have been thoroughly investigated and the facts from the investigation have been documented on appropriate reports and forms.

Accident reports and compensation claim forms have been properly completed designating the injured employee's major command and servicing civilian personnel office. Compensation claims are challenged and controverted when necessary. Officers then establish procedures to ensure required evaluation for personnel are provided, used, and maintained in accordance with regulations.

Safety officers need to make sure that military personnel are furnished when performing industrial activities similar to those performed by civilian personnel. When required, safety will be funded from appropriated fund accounts available at the installation or activity. Special clothing and equipment include clothing and equipment is needed for the protection of personnel to perform their assigned tasks efficiently under extreme conditions or situations. These include but are not limited to heat, cold, wetness, pressure, environmental pollution (for example, toxic or hazardous gases, vapors, fumes, or materials); deleterious animal, insect, parasitic, or amoebic life; or any combination of these conditions.

Commanders are authorized to give daily safety education and test to their subordinates to protect them from any hazard. For the safety education and preparation, the following criteria must be met: (1)The use of special clothing and equipment would serve a military purpose. (2)The purchase of such clothing and equipment from commercial sources would not be practicable or would cause undue hardship on the individual concerned. (3)The clothing and equipment issued would be returned to the issuing organization when no longer required. (4)Environmental differential pay. Environmental condition needs to be checked before the commanders deploy their subordinates.

Conversely, the requirement to wear protective clothing in any particular work environment does not, of itself, provide justification for environmental inconsideration. For all activities in which official visitors and transients may be potentially exposed to hazards, the host, guide, or area supervisor will conduct a risk assessment of the work location to determine the appropriate protective measures. The hazard(s) to an acceptable level without requiring the use of protection, those measures may be employed(that is, eliminate foot hazards-no safety shoes). However, if it is determined that a safe level of risk cannot be obtained by using these procedures, then the host, guide, or area supervisor will be responsible for providing and assuring the proper use of protective device and the official visitors and transients will be required to wear the specified protective wear.

Safety officers need to establish and operate an effective explosives safety program to include exercising supervision over subordinate organizations to ensure that effective explosive safety procedures are implemented and maintained to include specific plans to correct violations of explosives safety standards. They can publish a command program to implement ammunition and explosives safety standards and to identify responsibilities for all subordinate organizations(including tenants) that store, handle, use, or transport explosives. They ensure qualified safety personnel review explosives safety site plans, safety submissions, and facility designs for new or modified explosives sites or facilities within the safety arcs of explosives operations. The safety officers ensure qualified occupational safety personnel review explosives safety waivers and exemptions for facilities and equipment and provide the commander with essential risk data regarding the deficient situation.

Effective range safety procedures are needed to be implemented and sustained to include safety office review of all new range construction and all range waivers. The command procedures are also to be implemented for leisure and recreational safety programs and the responsibilities for all subordinate organizations and installations are to be specified. Effective tactical water safety procedures are to be described in the operational regulations.

(a)Establishing and operating a safety program for mountain operations and steep area climbing activities and publicize appropriate to the geographic area.

(b)Providing for inspection of plain area operations for all-seasonal facilities, equipment, and adjacent areas on Army owned or leased properties. Such inspections will assure that safety and health requirements are met.

(c)Providing sufficient safety equipment, communication equipment, first aid facilities, protective devices, and other equipment at Army-controlled operations and daily activities for medical and protective usage.

(d)Issuing standing operational procedures for aerial operations and airborne activities. Safety officers should assure that all aerial operations and airborne facilities and equipment comply with safety and occupational health requirements. Army aerial commanders and staffs must prepare lifesaving equipment and safety-related trainings for all members in the aerial units.

(e)Informing personnel of the hazards of acting alone, in cold or heated area, during hours of darkness, severe weather or in unauthorized areas.

The Military personnel would get a lot of benefits through the safety officers activities described above: they would (a)avoid any possible and predictable hazards, (b)educate their peers and junior members to estimate possible hazards in their actions, (c)suggest ideas to improve safety conditions inside and outside base to reduce hazard level. The problem for the officers, however, is that there are not enough evaluation indicators for the safety education or activity. This study would suggest the evaluative indicators.

3. Developing the Evaluative Indicator of Safety Education

Based on the review of literature, the researcher developed safety education indicators. Oh & Lee[9] summarized a vast volume of literature about safety and health education at the workplace. They suggested various factors to evaluate and improve the safety education: (1)collecting and analyzing the hazards in the workplace[10], (2)collecting and analyzing the information about the health management system[11], (3)making the safety management plan in the workplace[12], (4)reflecting the opinions of military personnel in making the safety management plan, (5)investigating the implementation of health education and evaluation for military personnel[13], (6)reflecting the military personnel's need for health and safety education[14], (7)evaluating the leader's interest in the safety and health promotion[15], (8)investigating the military personnel's consciousness of safety[16], (9)employment of officer in charge of safety management[17], (10)percentage of the officers in charge of the safety management[18], (11)employment of the officers in charge of safety and health education[19], (12)qualification of the officers in charge of the safety and health education[20], (13)presence of department of safety and health management and education[21], (14)volume of contents of the safety and health education[22], (15)Percentage of budget for safety and health education[23], (16)implementation of regulations on safety and health, (17)specification of educational objectives on safety[24], (18)review of the appropriateness of the safety education objectives[25], (19)diversity of educational method for the safety education[26], (20)specification of the safety education contents, (21)implementation of the educational plan[27], (22)checking the military personnel's awareness of the safety objectives[28], (23)the military personnel's satisfaction in the safety education[29], (24)participation of the military personnel in the safety education[30], (25)availability of resources for the safety education, (26)communication about the contents of the safety education, (27) changes in the consciousness of the safety[31], (28)changes in the knowledge of the safety, (29)changes in the attitude toward the safety, (30)changes in the real actions in the safety management and implementation[32].

4. Discussion and Conclusion

As the ROKA emphasizes the human right and safety of the military personnel, the importance of the safety education is getting stronger. The commanders and staffs, however, feel more difficulty in planning, preparing, implementing, and evaluating the safety education.

The risk factors and hazards in the workplace in the military bases are the main targets of the safety education. ROKA authority requires all the military officers, NCOs, and staffs to take the safety education via on-line and off-line. When the ROKA authority intends to implement and evaluate the safety education, the evaluative indicators are essential as the basis for the safety education.

The academic circle has been presenting many studies accumulated about the safety and health education. The researchers use qualitative and quantitative methods for the studies and the outcomes of the studies indicate importance of the evaluative standards[33]. This study suggests the validated indicators for planning and evaluating the safety education for ROKA personnel. The researchers thoroughly reviewed the literature for the military safety education, and organized the evaluative indicators. The preceding researchers conducted the studies through interviews with workplace inspectors, leaders, and employee to draw the standards. In addition, the researcher also conducted survey to experts in the area of safety examination, safety design, and safety implementation. This study would set up the milestone for the safety education and design of the safety implementation, improvement, and evaluation.

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